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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,212	12/02/2003	Edward J. Koeneman	58482-010101	5429

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EXAMINER	
FOREMAN, JONATHAN M	

ART UNIT	PAPER NUMBER
3736	

MAIL DATE	DELIVERY MODE
04/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/727,212	KOENEMAN ET AL.	
	Examiner	Art Unit	
	JONATHAN ML FOREMAN	3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *69,71-80,82 and 83* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *69,71-80,82 and 83* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The following Office Action contains rejections to previously allowed and/or previously objected-to-as-allowable material as indicated in Office Action mailed 11/7/08. Accordingly, the following action has been made Non-Final.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 69, 71, 72, 74, 75, 82 and 83 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,396,337 to McBean et al.

In regard to claims 69, 71, 72, 74 and 75, McBean et al. disclose a system for assisting neuromuscular function comprising: at least one EMG sensor (54a) for detecting self-actuation of a neuromuscular system; at least one joint position sensor (54b) for detecting self-actuation of a joint; at least one force sensor for measuring a parameter indicative of muscle resistance (Col. 6, lines 33 – 50; Col. 9, lines 8 – 10); a computer processor (Col. 7, lines 4 – 5) for implementing a protocol responsive when self-actuation or attempted self-actuation is detected by the at least one EMG sensor but is not detected by the at least one joint position sensor (Col. 7, lines 12 – 17; Col. 8, lines 1 – 21); and a motion causing device for assisting the at least one joint in movement, said motion causing device following the protocol implemented by the computer processor (Col. 8, lines 5 – 8). The system includes an electronic memory for storing information regarding the patient (Col. 10,

lines 13 – 15). The protocol is based on previous measurements recorded from the EMG sensor, joint position sensor or the force sensor (Col. 10, lines 13 – 15). The motion causing device is an air muscle that includes at least one port (Col. 8, lines 43 – 45).

In regard to claims 82 and 83, McBean et al. disclose a system for assisting neuromuscular function comprising: at least one joint position sensor (24) for detecting self-actuation of a joint and measuring a joint motion (Col. 7, lines 33 – 48); a computer processor (34) for implementing a protocol responsive when self-actuation is detected by the at least one joint position sensor and the measured joint motion has not achieved a predetermined value or when self-actuation is attempted and the measured joint motion has not achieved a predetermined value (Col. 7, lines 12 – 17; Col. 8, lines 1 – 21; Col. 9, lines 8 - 10); and a motion causing device for assisting the at least one joint in movement, said motion causing device following the protocol implemented by the computer processor such that the joint motion achieves the predetermined value (Col. 8, lines 5 – 8).. The motion causing device is an air-muscle (Col. 8, lines 43 – 45).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,396,337 to McBean et al. in view of U.S. Patent No. 5,012,820 to Meyer.

In regard to claim 73, McBean et al. fail to disclose the system including at least one neuromuscular electrical stimulating system. Meyer discloses a system for neuromuscular function

reeducation and restoring physical function of at least one neuromuscular system associated with an at least one joint in a patient, the system at least one neuromuscular electrical stimulating (NMES) system for providing neuromuscular stimulation to the at least one neuromuscular system (Col. 5, lines 1 – 9). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include at least one NMES as taught by Meyer to the system disclosed by McBean et al. in order to excite

6. Claim 76 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,396,337 to McBean et al. in view of U.S. Patent No. 6,010,468 to Grove et al.

In regard to claim 76, McBean et al. disclose a motion causing device being an air-muscle, but fail to disclose a computer processor for controlling a valve to supply air to the air-muscle. Grove et al. disclose a system for restoring physical function of a neuromuscular system and teach a motion causing device being an air-muscle (133) that shortens in length upon inflation to cause the joint to pivot and includes at least one port for supplying air. Grove et al. teach a computer processor for controlling a valve for supplying air to the air-muscle (Col. 12, lines 47 – 60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the motion causing device as disclosed by McBean et al. to include an air-muscle having a computer controlled valve as taught by Grove et al. in order to provide the system with an easily controllably motion causing device.

7. Claims 77 - 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,396,337 to McBean et al. in view of U.S. Patent Application Publication No. 2002/0143277 to Wood et al.

In regard to claims 77 - 80, McBean et al. disclose obtaining measurements form an EMG sensor and a force sensor. However, McBean et al. fail to disclose displaying the measurements

from the EMG sensor and the force sensor. Wood et al. disclose a system for restoring physical function of a neuromuscular system and teach displaying measurements from an EMG sensor and a force sensor [0055] for a patient to monitor the compliance and performance. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system as disclosed by McBean et al. to include a display for displaying the measurements made by the EMG sensor and the force sensor as taught by Wood et al. in order to encourage patients to continue with their exercises [0010].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN ML FOREMAN whose telephone number is (571)272-4724. The examiner can normally be reached on Monday - Friday 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571)272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. M. F./
Examiner, Art Unit 3736

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736